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DIVISION OF OIL, GAS AND MINING

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M/027/007

April 15, 1998

TO: Wayne Hedberg, Permit Supervisor, Minerals Program

FROM: Anthony A. Gallegos, Reclamation Engineer *aa*

RE: Evaluation of Western States Mining Company (WSMC) April 1, 1998 Cost Estimate for Sampling and Analyses of Jumbo Mining Co.'s Features at the Drum Mine, M/027/007, Millard County, Utah

Attached is an item by item evaluation of unit costs contained in the WSMC cost estimate. The WSMC unit costs were compared with similar equipment costs based on the Rental Rate Blue Book and the Means Heavy Construction Cost Data 1998. Equipment and worker productivity was not evaluated.

The WSMC unit costs for the excavator and backhoe are lower than the costs estimated using the standard Division references.

The cost for equipment mobilization and demobilization would be incurred by WSMC whether or not they performed the sampling on the Jumbo features; therefore, charging one half of this to the Jumbo project may not be appropriate. On the other hand, if the Division had to hire out for this work the mobilization costs would be at least \$2,000.

The WSMC hourly cost for a supervisor is lower than the cost estimated using the standard Division references. The WSMC hourly cost for a laborer is much lower than the cost estimated by the Division. The WSMC estimate of subsistence is slightly higher than the room and meal per diem allotted to Division staff.

The WSMC costs for transportation are comparable to the average transportation costs estimated using the standard Division references. The WSMC cost for the truck and fifth-wheel trailer is higher than the Division's estimate, and the cost for the pickup truck alone is lower than the Division's estimate. It is unknown if the two round trips from the Drum Mine to Reno, Nevada are needed solely for the transportation of the 28 samples coming from the Jumbo features. Similarly, it is unknown if the proposed 10 round trips from Delta to the mine site are needed solely for the sampling of the Jumbo features.

The references used by the Division did not contain information to make a comparison of the WSMC cost for sampling supplies, or costs for the specific lab analyses. Preliminary cost information provided to the BLM by WSMC for lab analyses (excluding labor) was \$16,040. This is slightly higher than this estimate of \$15,215.

REVIEW OF APRIL 1, 1998 WSMC COST ESTIMATE  
FOR SAMPLING & ANALYSIS OF JUMBO FEATURES

M/027/007

04/15/98

**EXCAVATOR**

WSMC - \$70/hr including cost of operator

DOGM - A Cat 315 excavator with a 0.680 CY bucket, 99 hp, and 10 ft. 1 in. stick would be able to dig to 20 ft 7 in. depth. The Rental Rate Blue Book 6/97 (Blue Book), page 10-5, gives costs for a Cat 315 crawler mounted hydraulic excavator as: \$53/hr rental + \$11.90/hr operating costs. The Utah regional factor for rental is 0.895. The Means Heavy Construction Cost Data 1998 (Means) gives an operator wage under Crew B-12A, equipment operator (med) crane, as \$39.58/hr including overhead and profit.

DOGM total excavator cost per hour calculated as:

$$(\$53/\text{hr})(0.895) + (\$11.90/\text{hr}) + \$39.58/\text{hr} = \$98.92/\text{hr}$$

**BACKHOE**

WSMC - \$40/hr including cost of operator

DOGM - Blue Book 4/97, page 9-16 gives a cost for a Cat 416C tractor-loader backhoe with EROPS, 4WD, 1.00 CY bucket, 75 hp, as \$29.00/hr rental and \$7.00/hr operating costs. The Utah regional factor for rental is 0.865. Means Crew B-11M equipment operator (med) is \$37.20/hr including overhead and profit.

DOGM total backhoe cost per hour calculated as:

$$(\$23/\text{hr})(0.865) + (\$6.10/\text{hr}) + (\$37.20/\text{hr}) = \$63.20/\text{hr}$$

**EQUIPMENT MOBILIZATION & DEMOBILIZATION**

WSMC - total cost \$5,000 with one-half of this charged to work on Jumbo areas

DOGM - Equipment mobilization & demobilization for equipment is typically estimated as \$1,000 per piece of heavy equipment. Remote locations or difficult access would increase this amount accordingly. The equipment fleet for this job (excavator, backhoe) would cost approximately \$2,000 to mobilize/demobilize. WSMC's mob/demob cost would be the same if the Jumbo work was not performed by their equipment.

**FIELD SUPERVISION & LABOR**

WSMC - supervisor \$30/hr, laborer \$10/hr, subsistence \$80/day

DOGM - Means 010-036-0180 Project Manager minimum is \$1,815/week including overhead and profit. For a five day work week this gives \$363/day. For an 8 hour day this gives \$45.38/hr.

Means 010-036-0160 General Purpose Laborer, average is \$1,325/week including overhead and profit. This would be \$265/day or \$33.13/hr.

DOGM per diem for in state travel (room & board) is  $\$45 + \$26 = \$71/\text{day}$

### **TRANSPORTATION**

WSMC - pickup truck & fifth-wheel trailer \$1.25/mile; pickup truck \$0.50/mile.

DOGM - Blue Book 8/97 page 20-7, gas powered, on highway, light duty truck, 4X2, 1 ton, would be \$6.00/hr rental and \$5.75/hr operating cost. The Utah factor for rental is 0.898. Blue Book 8/97 page 19-3 non-tilt deck, utility trailers, gooseneck/5th-wheel, 6 ton would be \$2/hr rental and \$1/hr operating costs. The Utah factor for rental is 0.853. Means Crew B-64 truck driver (light) is \$32.65/hr including subcontractor's overhead & profit.

DOGM total costs for a one-ton pickup truck and fifth-wheel trailer estimated as:  
$$(\$6.00/\text{hr})(0.898) + (\$5.75) + (\$2/\text{hr})(0.853) + (\$1/\text{hr}) + (\$32.65/\text{hr}) = \$46.49/\text{hr}$$

Assuming an average speed of 40 mph would give a cost of approximately \$1.16/mile.

DOGM total costs for a one-ton pickup truck estimated as:  
$$(\$6.00/\text{hr})(0.898) + (\$5.75) + (\$32.65) = \$43.79/\text{hr}$$

Assuming an average speed of 55 mph would give a cost of approximately \$0.80/mile.

For comparison, DNR motor pool costs for a vehicle (without fuel costs) are: one-ton pickup \$0.15/mile; 3/4 ton pickup \$0.13/mile; half-ton pickup \$0.12/mile.

### **SUPPLIES**

WSMC - \$530 for 130 3.5-gallon containers + 15 1-gallon containers. This gives an average cost of \$3.66/container.

DOGM - No direct comparison using the Blue Book or Means reference books.

### **LABORATORY ANALYSES**

WSMC - For composite samples run a suite of: Meteoric Water Mobility Procedure (MWMP), Acid Generating Potential-Acid Neutralizing Potential, Paste pH, and Weak Acid Dissociable Cyanide at \$1,200/sample. Composite samples from the heap toe for only MWMP \$675/sample. Agronomic evaluation of growth media at \$91/sample. Lump sum for sample preparation at \$350.

BLM ESTIMATE BASED ON PRELIMINARY INFORMATION FROM WSMC  
Composite sample analyses \$1,080/sample. Soil samples \$400/sample.

DOGM - No direct comparison for these types of lab analyses using the Blue Book or Means reference books.